STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT BOOK

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 102006-016 Project Number: 2006-02-002

Owner: Gates Corporation

Owner's Address: 1551 Wewatta Street, Denver, CO 80202-6173

Installation Name: Gates Corporation

Installation Address: 3015 LeMone Industrial Boulvard, Columbia, MO 65201

Location Information: Boone County, S20, T48N, R12W

Application for Authority to Construct was made for:
This is to correct an error with a control device not being connected to equipment as stated in the original permit application and to incorporate installation–specific design information including the installation of four Carbon Twisting units. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required.*

☐ Standard Conditions (on reverse) are applicable to this permit.

☑ Standard Conditions (on reverse) and Special Conditions (listed as attachments starting on page 2) are applicable to this permit.

OCT 31 2006
EFFECTIVE DATE

Steven Julian for JLK
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional Office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed Special Conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

2006-02-002

Gates Corporation

1551 Wewatta Street, Denver, CO 80202-6173

Gates Corporation

3015 LeMone Industrial Boulvard, Columbia, MO 65201

Boone County, S20, T48N, R12W

This is to correct an error with a control device not being connected to equipment as stated in the original permit application and to incorporate installation–specific design information including the installation of four Carbon Twisting units. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Gates Corporation
Boone County, S20, T48N, R12W

1. Superseding Condition
   The conditions of this permit supersede all special conditions found in the previously issued construction permits (Permit Numbers 032002-003, 092002-005, and 032003-031) from the Air Pollution Control Program.

2. Emission Limitation
   The following conditions shall apply to the entire installation, which shall include all equipment at this site (190-0108).
   A. The Gates Corporation shall not discharge into the atmosphere from this installation more than ten (10) tons of any single hazardous air pollutant (HAP) or more than twenty-five (25) tons of aggregate HAPs in any consecutive 12-month period.

   B. Gates Corporation shall not discharge into the atmosphere from this installation more than forty (40) tons of volatile organic compounds (VOCs) in any consecutive 12-month period.

   C. Gates Corporation shall not discharge into the atmosphere from this installation more than fifteen (15) tons of particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}) in any consecutive 12-month period.

3. Operational Limitation
   Gates Corporation shall not change the method of operation or the chemical make-up of the coatings used to treat the cords or the rubber mixed in the banbury mixers, from that which was submitted in the application, which results in the potential emissions of any HAP, new or existing, to exceed their respective Screen Modeling Action Level.

4. Record Keeping
   Gates Corporation shall maintain the monthly and the sum of the most recent consecutive 12-month records of HAP, VOC, and PM_{10} emissions from the installation. Attachment A *Calculations of Emissions from Coatings,* Attachment

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

B *Total HAPs Compliance Worksheet,* Attachment C *Toluene Compliance Worksheet*, Attachment D *VOC Compliance Worksheet*, and Attachment E *PM_{10} Compliance Worksheet* or equivalent forms, shall be used to demonstrate compliance with Special Conditions 2.A, 2.B, and 2.C. These records shall be maintained onsite for five (5) years and shall be made available for inspection to the Department of Natural Resources' personnel upon request.

5. Reporting
   A. Gates Corporation shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of each month if the 12-month cumulative total (Special Condition Number 4) records show that the source exceeded the limitations of Special Condition Numbers 2.A, 2.B, or 2.C.

6. Control Requirements
   A. Thermal Oxidizers
      1. Gates Corporation shall control VOC, HAP, and carbon monoxide (CO) emissions from each of the cord treaters (EP-03) and the solvent based coating mixing (EP-01) through the use of thermal oxidizers at all times the processes are in operation. The thermal oxidizers shall be operated and maintained in accordance with the manufacturer's specifications. The thermal oxidizers shall achieve a destruction/removal efficiency for VOCs, organic HAPs, and CO of at least 99 percent (%).
      2. The operating temperature of the thermal oxidizer shall be set at the determined set point of 1350 degrees Fahrenheit and continuously monitored and recorded any time cord treaters or solvent based coating mixing processes are in operation or any time that VOC, HAP, or CO emissions are possible. The most recent 60-months of records shall be maintained on-site and shall be made immediately available to Missouri Department of Natural Resources' personnel upon request.

   B. Dust Collectors (with Gauges)
      1. Gates Corporation shall control emissions from the production banbury mixers (EP-06), the carbon black weigh hoppers (EP-15), the whites weigh hopper (EP-18), the bulk carbon black transporters from storage silos to day bins (EP-22), and the bulk carbon black transporters from the receiver to the storage silos (EP-20) using dust collectors as specified in the permit application. The dust collectors shall be operated and maintained in accordance with the manufacturer's specifications. The dust collectors shall be

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources employees may easily observe them. Replacement filters for the dust collectors shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

2. Gates Corporation shall monitor and record the operating and pressure drop across the dust collectors at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
3. Gates Corporation shall maintain an operating and maintenance log for the dust collectors which shall include the following:
   a. Incidents of malfunction, with impact on emissions, duration of event, probably cause, and corrective action; and
   b. Maintenance activities, with inspection schedule, repair actions, and replacement, etc.

C. Cartridge Filters and Dust Collectors

Gates Corporation shall control emissions from the bulk carbon black storage silos (EP-21), the carbon black day bins (EP-14), the whites day bins (EP-17), the bulk carbon black receiver (EP-19), the carbon black bag busters (EP-13), the whites bag busters (EP-16), research and development banbury mixers (EP-06), and the vacuum clean-up system (EP-23) using cartridge filters and dust collectors as specified in the permit applications.

1. The control devices shall be operated and maintained in accordance with the manufacturer's specifications. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance and abrasion resistance).

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

2. Gates Corporation shall maintain an operating and maintenance log for the control devices which shall include the following:
   a. Incidents of malfunction, with impact on emissions, duration of event, probably cause, and corrective action; and
   b. Maintenance activities, with inspection schedule, repair actions, and replacement, etc.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW
Project Number: 2006-02-002
Installation ID Number: 019-0108
Permit Number:

Gates Corporation
3015 LeMone Industrial Blvd.
Columbia, MO 65201

Complete: September 15, 2006
Reviewed: September 20, 2006

Parent Company:
Gates Corporation
1551 Wewatta Street
Denver, CO 80202-6173

Boone County, S20, T48N, R12W

REVIEW SUMMARY

- Gates Corporation has applied for an amendment to correct an error that occurred in the original permit application and to incorporate installation specific design information. The original application assumed that the second (latex) dip was vented to the thermal oxidizer for the respective cord treated. Instead, the first and third dips and all ovens (including the ones associated with the latex dip) are vented to the thermal oxidizer. The original application included two 60-end cord treaters and a 20-end cord treater as being installed when one 60-end cord treater, one 40-end cord treater, and one 20-end cord treater was installed. In addition, the installation will install four (4) carbon twisting units. The twisters take carbon fiber and twist them into cord. These units will be incorporated in Emission Point (EP-03) for the cord treaters.

- Hazardous Air Pollutant (HAP) emissions are expected from the installation's existing equipment. HAP emissions are limited to de minimis levels.

- The following NSPS apply to the previously permitted equipment. 40 CFR Subpart "VVV" of the NSPS, *Standards of Performance for Polymeric Coating of Supporting Substrates Facilities*, applies to the coating mix operations, the 60-end cord treater, the 40-end cord treater, and the 20-end cord treater. 40 CFR Subpart "Kb" of the NSPS, *Standards of Performance for Volatile Organic Liquid Storage Vessels,* does not apply to the storage tanks due to their capacity being less than 40 cubic meters. Gates Corporation did not install the previously permitted 10 million Btu natural gas fired boiler (Permit Number 032002-003), but rather installed a 1,080 Btu natural gas boiler. Thus 40 CFR Subpart "Dc" of the NSPS, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,* does not apply.

- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT)

regulations apply to the powdered raw material handling systems or the existing installation. Subpart "OOOO", *Fabric Printing, Coating & Dyeing* does not apply because the installation is not a major source for HAPs.

- A dust collector is being used to control the PM_{10} emissions from the production banbury mixers, the carbon black weigh hoppers, the whites weigh hoppers, the bulk carbon black transporter from the storage silos to day bins, and the bulk carbon black transporters from the receiver to the storage silos. Cartridge filers and dust collectors are being used to control PM_{10} emissions from the bulk carbon black storage silos, the carbon black day bins, the whites day bins, the bulk carbon black receiver, the carbon black bag busters, the whites bag busters, and the vacuum clean-up system.

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of $PM_{10,}$ VOCs and HAPs are conditioned to de minimis levels.

- This installation is located in Boone County, an attainment area for all criteria air pollutants.

- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was performed to determine the ambient impact of MDI, Styrene and Toluene because they were found to be above their respective screen modeling action levels.

- Emissions testing is not required for the equipment.

- A basic operating permit is required for this installation because of the NSPS applicability. Potential emissions of all pollutants are either below or conditioned to de minimis levels for the entire installation.

INSTALLATION DESCRIPTION

Gates Corporation Columbia Missouri plant operates a coating process that produces coated cords and rubber slabs. These coated cords and slabs are shipped off-site for incorporation into other products such as automotive belts and hoses. The installation's existing potential emissions of HAPs are above the major source level and existing potential emissions of VOC are above de minimis levels, but both are conditioned to de minimis levels. The installation's emissions of all pollutants are either below or conditioned to their respective de minimis levels.

The coating process involves solvent-based coating mixing, water based coating mixture and cord treaters including drying and curing ovens. The solvent based mixing operation consists of one (1) in-line mixer with three (3) tanks and five (5) batch mixing tanks. The water based mixing operation consists of five (5) batch mixers. The installation also has three bulk toluene storage tanks associated with the process. An

8,000 gallons storage tank will be used to store pure toluene. A 1,000-gallon storage tank will be used to store distilled toluene, while a 500-gallon storage tank will store waste toluene. Rubber production takes place within four production mixers and one research and development mixer. A powdered raw material handling system handles the dry ingredient fed to the mixers although manual additions also occur. Plant wide natural gas combustion, a parts washer which is used to clean dip pans, and two maintenance parts washers make up miscellaneous process emissions.

Emissions from the solvent based mixing (cement room and each of the three cord treaters (except the latex dips)) are controlled by thermal oxidizers. The rubber mixers and powered raw material handling system are controlled by dust collectors and cartridge filters.

The cord treating operation consists of one (1) 60-end cord treaters, (1) 40-end cord treaters and one (1) 20-end cord treater. Each of the cord treaters consist of three different dip tanks. The first dip is a solvent–based epoxy, an MDI or an Aramid dip. The second dip tank is latex, and the third is a cement dip. Each dip is followed by a series of ovens to dry and cure the dip that was just applied to the cord. The original application assumed that each dip and the ovens associated with those dips are vented to the thermal oxidizer. The latex dip is not controlled. However, a portion of emissions from the latex dip are likely captured by the ovens and vented through the thermal oxidizers due to the flow of air into the cord treaters. However, the amount captured cannot be quantified without testing. It is therefore assumed to be uncontrolled.

Five (5) banbury mixers are permitted for the installation. One of the mixers is used for research and development, while the other four (4) mixers are used for production. The rubber is mixed and cooled using ambient conditions at the installation. Any further processing of the rubber slabs occur offsite. A dust collector is used to control PM_{10} from the production banbury mixers.

The following permits have been issued to installation 019-0108 from the Air Pollution Control Program.

Table One: Permits issued to Installation (019-0108).

Permit Number	Description
0188-066*	Parker Hannifin Company for nordale fluid eliminator
032002-003	Cord Treating and Rubber Mixing
092002-005	Add Rubber Mixers
032003-031	Powered Rubber Handling System
OP	Basic Operating Permit

* This permit was issued to an installation previously located at the site Gates Corporation currently occupies. The company, and therefore the permit, had no affiliation with Gates.

PROJECT DESCRIPTION

Gates Corporation has been issued New Source Review Permits (Permit Numbers 032002-003, and 092002-005) for the installation of cord treaters and rubber mixers. However, since the issuance of those permits, formularies and production rates are

better defined now that the plant is in operation. The updated design data was used as the basis application instead of estimates based on an outdated design. Data from the latest stack testing approved by the Air Pollution Control Program was used in the application. The throughput rates are listed in the following tables.

In the application, pollutant concentrations are based on the worst case formularies for each type of coating except for the MDI coating. MDI from the MDI coating is based on July 2005 stack test results. VOC concentrations are estimates based on the constituents of the formularies.

In addition, to updating the permit with updated formularies and production rates and design data, it authorizes the addition of four (4) carbon twisting units with a combined Maximum Hourly Design Rate (MHDR) of 0.123 tons per hour. The combined potential to emit for all four twisters, 2.31 X 10^{-5} PM_{10}, is less than the permitting thresholds of 10 CSR 10-6.061(3)(A)3.A. and 10 CSR 10-106.061 (3)(A)3.C. A construction permit would not be required for the installation of the twisters. However, since this application is an overhauling of the installation wide construction permit to reflect as built conditions including the twisters in the permit is appropriate.

The twisters take carbon fiber yarn(s) and twist them into cord. Each twister will have components of the process encapsulated in enclosures. Any waste that accumulates in the enclosures will be cleaned as part of routine house keeping activities. The twisters will be housed inside a separate room inside the building. A filtered vent will exhaust the room to the main plant building to achieve a negative pressure on the building. However, no direct vent to the ambient air.

Table Two: Emission Points* EP-01, EP-02, EP-03, EP-06, and EP-08 Throughputs.

EP-01 cement room	**Pounds/Hour**
Epoxy	353.85
MDI	353.85
Cement	314.76
EP-02 mix area	**Pounds/Hour**
Aramid	1119.33
Latex	737.60

EP-03	**Pounds/Hour**	**Pounds/Hour**	**Pounds/Hour**	**Pounds/Hour**
Equipment	**No Latex**	**MDI**	**Aramid**	**Cement**
60-End Treater	176.92	176.92	183.13	157.38
40-End Treater	117.95	117.95	122.09	104.92
20-End Treater	58.97	58.97	61.04	52.46
Latex Dip	325.10**			

EP-06	**Hourly Rated Capacity**
Production Rubber Mixers	7.2 tons of rubber produced
R &D Rubber Mixers	0.15 tons of rubber produced

Table Two: Continued.

EP-08	Losses	Pounds Emitted/Year
Toluene Tanks (3)	Working	1565.16
Toluene Tanks (3)	Breathing	62.73
EP-11	**Potential Throughput**	**Units**
Plant wide Natural Gas	0.0592	Million Cubic Feet/Hour

*Note emission points EP-04, EP-05, EP-07, EP-09, EP-10 and EP-12 no longer exist as they have been combined with current emission points.
**The quantity reported for latex dip under no latex is actually the potential amount of latex that could be applied to the cord.

Table Three: Emission Points EP-13 through EP-23 Throughputs.

Emission Point	Description	Hourly Capacity	Units
EP-13	Carbon Black Bag Busters	9.0	Tons
EP-14	Carbon Black Day Bins	13.5	Tons
EP-15	Carbon Black Weigh Hoppers	2.9880	Tons
EP-16	Whites Bag Buster	6.0	Tons
EP-17	Whites Day Bins	6.0	Tons
EP-18	Whites Weigh Hopper	1.8360	Tons
EP-19	Bulk Carbon Black Receiving	7.5	Tons
EP-20	Bulk Carbon Black Receiving Transporter	7.5	Tons
EP-21	Bulk Carbon Black Storage Silos	7.5	Tons
EP-22	Bulk Carbon Black Transporters	13.5	Tons
EP-23	Carbon Black Vacuum Cleanup System	2.9880	Tons

The permit authorizes the installation of four (4) carbon twisting units and establishes the throughput and corrects the control device not being connected to the latex dipping process. The amount of emissions are based on the recalculated throughput values after the plant has been in operation. The permit activity prior to this permit was done prior to construction.

Emission point EP-01, the cement room, has a capture efficiency assigned based on AP-42 Section 4.2.2.7 (09/88). The assigned value is based on the assumption that 90% of the emissions are lost during coatings. MDI coating emissions are based on the July 25, 2005 stack test data. The control efficiency of the Cement Room thermal oxidizer is based on the manufacturer's guarantee of 99 destruction efficiency. Emission Point EP-02, has capture and control efficiencies assigned based on AP-42 Section 4.2.2.7 (09/88). The assumption is that 10 percent of emissions are lost during mixing except for formaldehyde which is based on sampling data, and the control efficiency of tight fitting Aramid and Latex lids is 40 percent. Also, EP-03, Cord Treaters, has a capture efficiency assigned based on AP-42 Section 4.2.2.7 (09/88). It is assumed that 90 percent of the emissions are lost during coating except for formaldehyde and MDI which are based on test data. Formaldehyde concentrations were estimated from formularies and sampling results. The control efficiency of the Cord Treater thermal oxidizers is 99 percent from manufacturer's guarantee. The latex dip is not assigned any value for control.

Table Four: Control Device Efficiency.

Emission Point	Control & Capture	Overall Control Efficiency
EP-11	None	0
EP-13	Cartridge Filters	99.99
EP-14	Cartridge Filters	99.99
EP-15	Hood & Cartridge Filters	99.9*
EP-16	Cartridge Filters	99.99
EP-17	Cartridge Filters	99.99
EP-18	Hood & Cartridge Filters	99.9*
EP-19	Cartridge Filters	99.99
EP-20	Cartridge Filter	99.9/99.9*
EP-21	Dust Collector	99.9
EP-22	Cartridge Filters	99.9*
EP-23	Cartridge Filter	99.9*
EP-24	None	0

* Emission factors used in the emission calculations account for controls so that the actual efficiency were not used in the calculations.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors,* Fifth Edition, Section 6.1 *Carbon Black* (5/83), Section 11.26, *Talk Processing (*11/95), and from EPA's Factor Information Retrieval (FIRE) System, Version 6.23. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary for this project.

Table Five: Emissions Summary (tons per year).

Pollutant	Regulatory *De Minimis* Levels	Existing Potential Emissions (Note 1)	Existing Actual Emissions (2005 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential (Note 2)
PM_{10}	15.0	25.1	3.03	23.90	15
SOx	40.0	0.13	0.03	0.16	N/A
NOx	40.0	22.33	4.18	25.92	N/A
VOC	40.0	86.69	8.08	114.69	40
CO	100.0	3.04	0.0	21.77	N/A
HAPs	10.0/25.0	72.06	0.049	54.40	10/25
MDI	10	N/D	N/D	2.34	10
Styrene	10	N/D	N/D	5.39	10
Toluene	10	N/D	N/D	29.07	10

N/A = Not Applicable; N/D = Not Determined

Note 1: Emissions are from Permit Number 032003-031. Existing potential emissions reflect the potential emissions from permit number 032002-003 (column 3) added to the potential emission of the applicant (column 5) found in Table 1 Emissions Summary (tons per year) of permit number 032003-031.

Note 2: The installation's conditioned potential emissions reflect limitation placed on equipment permitted in previous permits. These limitations are for the entire installation.

Some HAPs are also VOC's and are counted in the VOC PTE totals. The initial application submitted in January 2006 included emissions from chloroprene. It was believed that chloroprene was emitted from the latex mixing and dipping operations submitted in the permit applications. The data used in the calculations was from a Dupont MSDS dated August 31, 1994 for the product Neoprene Latex 571. The recent MSDS sheet dated December 22, 2004 does not list chloroprene as a component. According to the applicant, in the 1990's, the production process for Neoprene Latex 571 was changed to eliminate the chloroprene. The Gates plant became operational in October 2002. Therefore chloroprene was not used at the Gates Corporation and is not included in the above emission totals. The applicant amended their original applicant upon becoming aware of these events. Also, they provided information in the form of electronic communication between Gates and Michael Lynch from Dupont Elastomers and the MSDS sheets.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM_{10}, VOC and HAPs are conditioned to below de minimis levels.

APPLICABLE REQUIREMENTS

Gates Corporation shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information,* 10 CSR 10-6.110
  The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.

- *Operating Permits*, 10 CSR 10-6.065

- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170

- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220

- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Standard of Performance for Polymeric Coating of Supporting Substrates Facilities*, 40 CFR Part 60, Subpart VVV, applies to the coating mix operations, the 60-end cord treater, 40-end treater, and the 20-end cord treater permitted in Permit Number 032002-003.

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of MDI, Styrene, and Toluene. MDI, Styrene, and Toluene were all found to be above their respective screen modeling action levels. Screen3 was run and they were found to be in compliance with the Risk Assessment Level (RAL).

Table Six: Modeled Impact Compared to RAL.

Pollutant	Highest Modeling Value Attained	RAL	Time Period
MDI	2.33	2.667	8 Hour
Styrene	23.76	2240	24 Hour
Styrene	4.75	333	Annual
Toluene	18.69	400	24 Hour
Toluene	3.74	20	Annual

Table Six shows that Gates Corporation in Columbia Missouri is below the RAL values.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Timothy Paul Hines
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated 01/27/2006, received 01/30/2006, designating Gates Corporation as the owner and operator of the installation.
- The Amended Application for Authority to Construct form, dated 07/07/2006, received 07/12/2006, designating Gates Corporation as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition
- On September 15, 2006 Gates Corporation submitted via E-Mail from Barr Engineering communication, data sheets predicting and describing the emission of the 4 cord twisters. Additional data sheets including revised MHDR was supplied on September 26, 2006.

Attachment A – Emissions Calculations from Coatings

The Gates Corporation
Boone County, NE 1/4 of S 29 & SE 1/4 of S 20, T 48N, R12W
Project Number: 2006-02-002
Installation ID Number: 019-0108
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J	Column K
Water Based Coatings (Note 1)										
Formula	Amount Mixed (pounds)	% HAP	% Toluene	% VOC	% Emitted during Mixing Operation	% Emitted During Cord Treating Process	Control Efficiency on Cord Treating Process	HAP Emissions (tons)	Toluene Emissions (tons)	VOC Emissions (tons)
(Note 2)					(Note 3)	(Note 3)	(Note 4)	(Note 5)	(Note 6)	(Note 7)
Total Emissions from Water Based Coatings (Note 8)										
Solvent Based Coatings (Note 9)										
Formula	Amount Mixed (pounds)	% HAP	% Toluene	%VOC			Control Efficiency	HAP Emissions (tons)	Toluene Emissions (tons)	VOC Emissions (tons)
(Note 2)							(Note 10)	(Note 11)	(Note 12)	(Note 13)
Total Emissions from Solvent Based Coatings (Note 14)										
Total Emissions from Coatings (Note 15)										

Notes for Attachment A – Emissions Calculations from Coatings

Note 1: Emissions from the water based coating itself will occur in the water based mixing operation (EP-02) and the cord treating processes (EP-03).

Note 2: A distinctive number (as used in the permit application) may be used to identify each formula. A separate document needs to be maintained that identifies each HAP, the weight percent of each HAP, and the VOC content for each formula.

Note 3: It was estimated that 10 percent (%) of the HAP, toluene, and VOCs are emitted during the mixing process (EP-02) for the water based coatings. The remaining 90 percent (%) is assumed to be emitted during the cord treating processes (EP-03).

Note 4: Control efficiency for the thermal oxidizers on the cord treaters (EP-03) is 99 percent (%) for volatile HAPs, including toluene, and for VOCs. There is no control device on the water-based coatings mixing process (EP-02).

Note 5: $$(\text{Column B})\left(\frac{\text{Column C}}{100}\right)(0.0005)\left[\left(\frac{\text{Column F}}{100}\right)+\left(\frac{\text{Column G}}{100}\right)\left(1-\frac{\text{Column H}}{100}\right)\right]$$

Note 6: $$(\text{Column B})\left(\frac{\text{Column D}}{100}\right)(0.0005)\left[\left(\frac{\text{Column F}}{100}\right)+\left(\frac{\text{Column G}}{100}\right)\left(1-\frac{\text{Column H}}{100}\right)\right]$$

Note 7: $$(\text{Column B})\left(\frac{\text{Column E}}{100}\right)(0.0005)\left[\left(\frac{\text{Column F}}{100}\right)+\left(\frac{\text{Column G}}{100}\right)\left(1-\frac{\text{Column H}}{100}\right)\right]$$

Note 8: Sum of HAP, toluene, and VOC emissions for the water based coatings.

Note 9: Emissions from the solvent based coating itself will occur in the solvent based mixing operation (EP-01) and the cord treating processes (EP-03).

Note 10: Control efficiency for the thermal oxidizers on the solvent based mixing operation (EP-01) and the cord treaters (EP-03) is 99 percent (%) for volatile HAPs, including toluene, and for VOCs.

Note 11: $$(\text{Column B})\left(\frac{\text{Column C}}{100}\right)\left(1-\frac{\text{Column H}}{100}\right)(0.0005)$$

Note 12: $$(\text{Column B})\left(\frac{\text{Column D}}{100}\right)\left(1-\frac{\text{Column H}}{100}\right)(0.0005)$$

Note 13: $$(\text{Column B})\left(\frac{\text{Column E}}{100}\right)\left(1-\frac{\text{Column H}}{100}\right)(0.0005)$$

Note 14: Sum of the HAP, toluene, and VOC emissions for the solvent based coatings.

Note 15: Sum of the water based coating emissions (Note 8) and the solvent based coating emissions (Note 14).

Attachment B – Total HAP Compliance Worksheet

The Gates Corporation
Boone County, NE 1/4 of S 29 & SE 1/4 of S 20, T 48N, R12W
Project Number: 2006-02-002
Installation ID Number: 019-0108
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

	Column A	Column B	Column C	Column D	Column E
HAP Emissions from Storage Tanks					
	Emission Point (EP08)	Throughput (1000 gallons) (Note 1)	HAP Emission Factor (lb/1000 gallon)		HAP Emissions (tons) (Note 2)
	8000 – Gal Working Loss				
	1000-Gal Working Loss				
	500-Gal Working Loss				
	Breathing Loss (Total)				0.003
	Total HAP Emissions from the Storage Tanks (Note 3)				
HAP Emissions From Banbury Mixers					
	Emission Point (EP06)	Amount of Rubber Mixed (tons)	HAP Emission Factor (lb/ton) (Note 4)		HAP Emissions (tons) (Note 2)
	Line #1				
	Line #2				
	Line #3				
	Line #4				
	R&D				
	Total HAP Emissions from the Banbury Mixers (Note 5)				
HAP Emissions from Mixing Process and Cord Treaters (EP-01, EP-02, EP-03) (Note 6)					
HAP Emissions from the Combustion of Natural Gas (Note 7)					0.04
Total HAP Emissions from the Installation for this Month (Note 8)					
12-Month HAP Emissions Total from the Previous Month's Worksheet (Note 9)					
Monthly HAP Emissions Total from Previous Year's Worksheet (Note 10)					
Current 12-Month Total HAP Emissions (Note 11)					

Attachment C - Toluene Compliance Worksheet

The Gates Corporation
Boone County, NE 1/4 of S 29 & SE 1/4 of S 20, T 48N, R12W
Project Number: 2006-02-002
Installation ID Number: 019-0108
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

	Column A	Column B	Column C	Column D	Column E
Toluene Emissions from Storage Tanks					
	Emission Point	Throughput	Toluene Emission Factor		Toluene Emissions
	(EP08)	(1000 gallons) (Note 1)	(lb/1000 gallon)		(tons) (Note 2)
	8000 – Gal Working Loss				
	1000-Gal Working Loss				
	500-Gal Working Loss				
	Breathing Loss (Total)				0.03
	Total Toluene Emissions from the Storage Tanks (Note 3)				
Toluene Emissions From Banbury Mixers					
	Emission Point	Amount of Rubber Mixed	Toluene Emission Factor		Toluene Emissions
	(EP06)	(tons)	(lb/ton) (Note 4)		(tons) (Note 2)
	Line #1				
	Line #2				
	Line #3				
	Line #4				
	R&D				
	Total Toluene Emissions from the Banbury Mixers (Note 5)				
Toluene Emissions from Mixing Process and Cord Treaters (EP-01, EP-02, EP-03) (Note 6)					
Toluene Emissions from the Combustion of Natural Gas (Note 7)					0.0
Total Toluene Emissions from the Installation for this Month (Note 8)					
12-Month Toluene Emissions Total from the Previous Month's Worksheet (Note 9)					
Monthly Toluene Emissions Total from Previous Year's Worksheet (Note 10)					
Current 12-Month Total Toluene Emissions (Note 11)					

Attachment D - VOC Compliance Worksheet

The Gates Corporation
Boone County, NE 1/4 of S 29 & SE 1/4 of S 20, T 48N, R12W
Project Number: 2006-02-002
Installation ID Number: 019-0108
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

	Column A	Column B	Column C	Column D	Column E
VOC Emissions from Storage Tanks					
	Emission Point	Throughput	VOC Emission Factor		VOC Emissions
	(EP08)	(1000 gallons) (Note 1)	(lb/1000 gallon)		(tons) (Note 2)
	8000 – Gal Working Loss				
	1000-Gal Working Loss				
	500-Gal Working Loss				
	Breathing Loss (Total)				0.03
	Total VOC Emissions from the Storage Tanks (Note 3)				
VOC Emissions From Banbury Mixers					
	Emission Point	Amount of Rubber Mixed	VOC Emission Factor		VOC Emissions
	(EP06)	(tons)	(lb/ton) (Note 4)		(tons) (Note 2)
	Line #1				
	Line #2				
	Line #3				
	Line #4				
	R&D				
	Total VOC Emissions from the Banbury Mixers (Note 5)				
VOC Emissions from Mixing Process and Cord Treaters (EP-01, EP-02, EP-03) (Note 6)					
VOC Emissions from the Combustion of Natural Gas (Note 7)					0.12
Total VOC Emissions from the Installation for this Month (Note 8)					
12-Month VOC Emissions Total from the Previous Month's Worksheet (Note 9)					
Monthly VOC Emissions Total from Previous Year's Worksheet (Note 10)					
Current 12-Month Total VOC Emissions (Note 11)					

Notes for Attachments B, C, and D

Note 1: Total amount of liquid stored in the tank during the month.

Note 2: $\text{Column E} = (\text{Column B})(\text{Column C})(0.0005)$

Note 3: Sum of the emissions from the storage tanks.

Note 4: Emission factors used in the permit application may be used here.

Note 5: Sum of the emissions from the banbury mixers.

Note 6: The emissions from the mixing operations (EP-01 and EP-02) and the cord treaters (EP-03) can be taken from *Attachment A – Emissions Calculations from Coatings*, Note 15.

Note 7: Emissions due to the combustion of natural gas (EP-11) in then the thermal oxidizer of EP-01, the thermal oxidizers and ovens of EP-03, the boiler and miscellaneous heating units.

Note 8: Sum of the emissions from the storage tanks, banbury mixers, mixing operations, cord treaters, and the combustion of natural gas. (i.e. Note 3 + Note 5 + Note 6 + Note 7).

Note 9: Running 12-month total of emissions from previous month's worksheet.

Note 10: Emissions reported for this month in the last calendar year.

Note 11: Amount reported for Note 9 minus amount reported for Note 10 plus amount reported for Note 8.

Attachment E - PM_{10} Compliance Worksheet

The Gates Corporation
Boone County, NE 1/4 of S 29 & SE 1/4 of S 20, T 48N, R12W
Project Number: 2006-02-002
Installation ID Number: 019-0108
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Column A	Column B	Column C	Column D	Column E	Column F
Emission Point	Throughput (Note 1)	Units	PM_{10} Emission Factor (lbs/unit)	Control Efficiency (%) (Note 2)	PM_{10} Emissions (tons) (Note 5)
EP-06 Production Banbury Mixers Internal Mixing & Milling		Tons of Rubber Mixed	0.4370		
EP-06 Pilot Banbury Mixer Internal Mixing & Milling		Tons of Rubber Mixed	0.4370		
EP-13 - EP-15Carbon Black Bag Buster System (Note 3)		Tons of Carbon Black Processed	0.0256		
EP-16 –EP-18 Whites Bag Buster System (Note 3)		Tons of Whites Processed	0.0076		
EP-19 – 22Carbon Black Bulk Handling System (Note 3)		Tons of Carbon Black Processed	0.1793		
EP-23 Carbon Black Vacuum		Tons of Carbon Black Processed	0.06		
EP-11 Plantwide Natural Gas Combustion (Note 4)					0.16

Total PM_{10} Emissions from the Installation for this Month (Note 6)	
12 – Month PM_{10} Emissions Total from the Previous Month's Worksheet (Note 7)	
Monthly PM_{10} Emissions Total from the Previous Years Worksheet (Note 8)	
Current 12-Month Total PM_{10} Emissions (Note 9)	

Note 1: Throughput should be in the units listing in the Column C.
Note 2: The capture efficiency is taken into account in the control efficiency listed. Control efficiencies are taken into account in the emission factor for those rows in which the control efficiency is left blank.
Note 3: The emission factor listed is an aggregate emission factor for the equipment associated with the system.
Note 4: The 0.16 tons of PM_{10} is the potential emissions for all natural gas combustion equipment at the installation.
Note 5: Column F = [(Column B)•(Column D)•(1-Column E/100)]/2000
Note 6: Sum of PM_{10} emissions reported in Column F
Note 7: Running 12-month total of emissions from previous month's worksheet.
Note 8: Emissions reported for this month in the last calendar year.
Note 9: Amount reported for Note 7 minus amount reported for Note 8 plus amount reported for Note 9.

Ms. N. Roxanne Lambert
HSE Coordinator
Gates Corporation
3015 LeMone Industrial Boulvard
Columbia, MO 65201

RE: New Source Review Permit - Project Number: 2006-02-002

Dear Ms. N. Roxanne Lambert:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact me at (573) 751-4817, or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:thl
Enclosures

c: Northeast Regional Office
PAMS File 2006-02-002
Permit Number: